

# 11

## Chapter 11 – Tools to Support Motivational Design

### *Forethought*

Is the design process more like an orderly progression from beginning to end, as in the image of the stair steps on the left (Figure 11.1), or a somewhat unpredictable adventure as in the picture of the skier? What kinds of tools can help with this process?

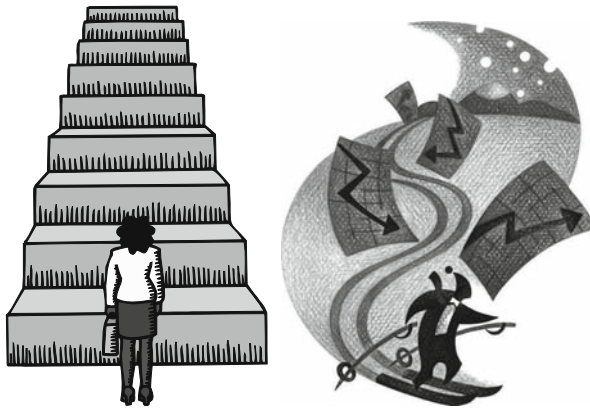


Figure 11.1. Orderly Progression or Unpredictable Adventure?

Processes and the tools that support them can be orderly and predictable or little more than general guidelines. The first type can be classified as *algorithmic* and the second as *heuristic*. Algorithmic processes and tools lead predictably to solutions. These include such things as flowcharts or checklists that explain how to start or stop a piece of machinery, how to fill out an application for social security, how to compute the amount of interest you will pay over the lifetime of a loan, recipes for baking cakes, and instructions for how to replace a flat tire. These tools are like calculators in that they provide answers, or guaranteed solutions to problems if they are applied exactly as intended.

Other tools help you arrive at a solution but do not guarantee that you will achieve it. They are called heuristics and are more in the nature of “rules of thumb.” They give you leverage in trying to solve your

problem, but still require an application of your own problem-solving skills to achieve it. Examples of these are checklists that provide lists of things to consider packing for overseas travel, other kinds of packing lists, symptoms to consider when trying to identify a problem with your health or automobile, or a strategy or set of tactics to use when designing instruction or learning how to troubleshoot an electrical circuit. The directional indicators in the skier illustration (Figure 11.1) are examples of heuristic tools. They give the skier a general sense of what direction to go, but there are too many uncontrollable factors in the skier's environment to be able to guarantee that the skier will arrive at an exact destination.

When attempting to understand human behavior and design solutions or interventions to improve peoples' knowledge, performance, or attitudes, there are far more heuristics available than algorithms. Landa (1974, 1976) conducted intensive studies of the development and use of algorithms in the context of instruction, learning, and performance and he demonstrated how powerful and effective they can be. However, they are limited in their scope of application. They are particularly effective in technical and procedural areas of learning and performance, but not as feasible in problem-solving or knowledge construction areas. The situation in motivational contexts is even more limited where most aspects of motivational design are heuristic. The tools described in this chapter can help you be more consistent in your efforts to analyze learner motivation and to design strategies, but it is still necessary for you to use judgment combined with experience and creativity to create effective motivational strategies. Your ability to produce innovative, creative solutions will grow with experience and effort. This is a learnable skill and it has been demonstrated by many people who have applied themselves to implementing the systematic motivational design process.

## ***Introduction***

This chapter contains six tools that support or supplement those that were presented in earlier chapters. Four of them provide heuristic support for specific kinds of motivational design tasks and two are measurement instruments that have been validated and used in many research studies.

- Simplified approach to motivational design
- Motivational Idea Worksheet
- Two motivational measurement instruments
  - The Course Interest Survey
  - The Instructional Materials Motivational Survey
- Motivational Tactics Checklist
- Motivational Delivery Checklist

## ***Motivational Design Matrix: A Simplified Approach***

### **Introduction**

The complete ten-step motivational design process is useful for large-scale projects as when motivationally enhancing a whole course or workshop, or when multiple people are working on the project. The ten-step model provides guidance for in-depth analysis of the audience and environment and supports documentation of each step for coordination and future reference. However, many projects do not require this degree of support. When a teacher or instructional developer is designing a single lesson or module, a much simpler approach would be desirable.

Suzuki developed and validated a *simplified approach to motivational design* (Suzuki & Keller, 1996) that was subsequently applied in two distributed learning environments. The first was in the development of motivationally adaptive computer-based instruction (Song & Keller, 2001). The second application was in the development of student support methods for a multinational distance learning course (Visser, 1998).

In Sendai, Japan, a team of 25 teachers in eight subject areas at Sendai Daichi Junior High School had been developing computer application projects for several years as part of a demonstration project sponsored by the Japanese national government. During the final two years of the project (1994–1995) they were asked to incorporate systematic motivational design into their process. Suzuki (as reported in Suzuki & Keller, 1996) developed the simplified approach to motivational design because the full, ten-step model would require too much time for training and implementation. The goal of the simplified approach was to ensure that the teachers would identify key motivational characteristics in the learners, the content area to be taught, and the hardware or software to be used. The teachers then evaluated this information and prescribed tactics based on identified motivational problems. This process helped ensure that teachers avoided the inclusion of excessive numbers of tactics, or tactics derived from their own preferred areas of interest without regard to the characteristics of the students and the situation.

The resulting design process is represented in a matrix (Table 11.1). In the first row, the designer lists salient characteristics of the learners' overall motivation to learn. The second row contains the designer's judgments about how appealing the learning task will be to the learners. The third and fourth rows ask about learners' expected attitudes toward the medium of instruction and the instructional materials. Each of the entries in these rows has a "plus" or "minus" sign to indicate whether it is a positive or negative motivational characteristic. Based on the information in these first three rows, the motivational designers decide how much motivational support is required and what types of tactics to use. They refer to reference

Table 11.1. Report Matrix to Support Simplified Design Process (adapted from Suzuki & Keller, 1996).

Simplified Motivational Design for E-mail and Internet Class				
DESIGN FACTORS	ARCS CATEGORIES			
	Attention	Relevance	Confidence	Satisfaction
<b>Learner Characteristics</b>	-Elective course, High interest (+)	-High commitment (+)	-Low skills in typing and in conversational English (-)	-Newly formed group of students (-), but familiar teacher (+)
<b>Learning Task</b> -(Learners' attitudes toward)	-New, attractive, adventurous (+)	-High public interest to the Internet (+) -Useful in future (+) -Limited access to computers (-)	-Seems difficult (-) -First exposure (-)	-High applicability of acquired skills (+) -Exciting outcome (+)
<b>Medium:</b> -Computer in this lesson (Learners' attitudes toward)	-Interesting new use as a networking tool (+)	-Familiar as a stand-alone learning tool (+)	-Unstable network connection may make students worried (-)	-Immediate feedback (+)
<b>Courseware Characteristics</b> -(E-mail software)			-English usage (-)	-Participatory for every students (+)
<b>Summary</b>	-Minimal tactics required:	-Minimal tactics required:	-Necessary to build confidence:	-Minimal tactics required:
<b>Motivational Tactics For The Lesson</b>	-Emphasize opportunity to communicate worldwide -Demonstrate immediate transmission and response features	-Demonstrate how it extends one's communication capabilities	-Set objectives cumulatively from low to high -Team teaching with an Assistant English Teacher -Use translation software	-Provide reinforcement by receiving messages from "network pals"

lists of potential tactics (Keller & Burkman, 1993; Keller & Suzuki, 1988) and also create their own based on the identified needs.

In this example, the Internet teacher determined that confidence is the only real problem area, and he listed some specific things to deal with it. He also listed some specific tactics for the other categories, but they serve to maintain motivation instead of solving a specific problem. A benefit of his application of this process was that in his initial motivational plan, before he applied this process, this teacher had a much longer list of tactics that he thought would be exciting and motivational. After doing the analysis and applying various selection criteria that are listed in the training materials on motivational design, he realized that his list of tactics would be too time consuming and would actually distract from the students' intrinsic interest in the subject. By using the design process, he was able to simplify the motivational plan and target it to specific needs.

An evaluation of the effectiveness of this motivational design process (Suzuki & Keller, 1996) verified that the teachers were able to use the matrix accurately with only a few entries not being placed appropriately, and more than two-thirds felt that it definitely helped them produce a more effective motivational design. Some teachers had difficulties with the analysis phase, which indicates that this is a critical area to address in training people to use the process.

## Application in Motivationally Adaptive Instruction

This simplified design process was modified and has been used in at least two subsequent projects. The first of these was the in the development of *motivationally adaptive computer-based instruction* and the second was in a distance learning course.

One of the challenges that has been mentioned in regard to conducting the formal motivational design process to guide the development of motivational strategies for the beginning of a course is that learner motivation changes over time and it can change in unpredictable ways. In a classroom or other instructor-led setting, an expert instructor can continuously gauge the audience's motivational condition and make adjustments as appropriate. But in self-directed learning environments, this type of continuous adjustment has not been a feature. Once the instruction has been designed and "packaged," everyone receives the same program, with the exception of limited branching and other learner control options. These options can have a positive effect on motivation, but they do not adequately reflect the range of motivational conditions that characterize learners at different points in time.

It would be possible to include a large number of motivational tactics to cover a broad range of motivational conditions, but this would most likely have a negative effect on motivation and performance. The reason is that when students are motivated to learn, they want to work on

highly task-relevant activities. They do not want to be distracted with unnecessary motivational activities such as extrinsic games or “ice breakers.” For this reason, it would be beneficial to have computer or multimedia software that can sense a learner’s motivation level and respond adaptively.

Song (Song, 1998; Song & Keller, 2001) designed and tested an approach to motivationally adaptive instruction. He built checkpoints into an instructional program on genetics for junior high school students. At predetermined points, students in the primary treatment group received a screen asking several questions about their motivational attitudes. Based on the responses, which were compared to actual performance levels, students would receive motivational tactics designed to improve attention, relevance, or confidence. He used a variation of the simplified ARCS model design process to create specifications for tactics to be included in the adaptive treatment. The resulting motivation and performance of this group was compared to a group that received highly efficient instruction with only a minimum of motivational tactics that centered primarily on acceptable screen layout. A second comparison group received the maximum number of tactics; that is, they received all of the tactics that were in the pool of potential tactics for the treatment group.

The results indicated that both the adaptive and full-featured treatments were superior to the minimalist treatment. In most instances, the adaptive treatment was superior to the full-featured one. There were limitations on the types of computer features that could be used in this study (for example there was no sound), but a more sophisticated treatment and also one which was longer than one hour would, based on these results, be expected to show even stronger treatment effects.

This study was a pioneering effort. Earlier papers that discussed or tested adaptive motivational design (Astleitner & Keller, 1995; del Soldato & du Boulay, 1995) were extremely rigorous but more limited in their approach; that is, they tended to focus on a particular aspect of motivation such as persistence or confidence. Song’s study is more holistic and provides a good foundation for a series of follow-up studies.

## **Application in Distance Learning**

The second extension of the simplified design process is in distance learning (Visser, 1998) and provides another example of the multicultural nature of this work. Visser, who lived in France, conducted her research with a distance learning course offered by a university in the United Kingdom and was working under the sponsorship of her university in The Netherlands. Furthermore, her study included an adaptation of a motivational strategy developed and validated in an adult education setting in Mozambique (Visser & Keller, 1990).

There is no doubt that there are serious motivational challenges among distance learners especially when they are not able to avail

themselves of social networks. This was the case in Visser's sample and would still be true in many parts of the world that rely on paper-based instructional materials that are distributed to distant learners with limited or no Internet support. The attrition rate alone can be viewed as an indication of motivational problems. Student comments often focus on their feelings of isolation, lack of feeling of making steady progress, and great doubts about being able to finish the course given their other responsibilities and time constraints.

Visser (Visser, 1998) used the simplified ARCS model design process to analyze the audience, conditions, and potential solutions in her situation. Her application of this process was contextualized in two ways. First was its restriction to a somewhat formal and traditional distance learning course, which uses textual material supplemented by an occasional audio or video-cassette. Based on her global assessment of the motivational problems in this situation, she concluded that it might be possible to have a positive effect on motivation by focusing on the student support system rather than on the instruction which could not be easily revised.

The second way in which her study was contextualized was its focus on the validation of a particular motivational strategy, although it does allow for the incorporation of multiple tactics. Her approach was to implement a program of "motivational messages" that would be sent to students according to two schedules. The first was a set of fixed points based on predictions of the moments during the course when these messages might have the strongest effect. These messages were the same for everyone. The second schedule consisted of personal messages sent to students when the tutor deemed it appropriate. These messages were in the form of greeting cards, which conveyed messages of encouragement, reminders, empathy, advice, and other appropriate content areas.

Design of the messages was based on the results of her application of the simplified design process. It was similar to the format created by Suzuki, but she modified the row headings to include specific aspects of the situation to consider in the analysis (Table 11.2). It is well known in distance education courses that learners typically are positive and excited at the beginning of a class but become disinterested and discouraged later in the course. Therefore, she made a distinction between her predictions of precourse attitudes (Row 1) and midterm attitudes (Row 2). Her responses to those issues came primarily from her experience in teaching this type of course with similar audiences. The third row (Table 11.2) predicts attitudes toward the course content and the fourth row asks about their attitudes toward the support they receive while taking the course. In the fifth row she summarized the results of the first four rows and used this as a basis for deciding what motivational tactics to use. Her matrix (L. Visser, 1998) provided an effective summary of major issues and decisions even though she went beyond the matrix in the final stages of designing strategies.

Table 11.2. Design Factor Categories from Visser (1998).

<b>Simplified Design for a Distance Learning Course</b>				
<b>Analysis and Design Categories</b>	<b>A</b>	<b>R</b>	<b>C</b>	<b>S</b>
1. Precourse attitudes of students toward distance learning				
2. Midterm attitudes toward distance learning				
3. Student reactions to this course content				
4. Characteristics of student support during the course				
5. Summary				
6. Examples of motivational tactics to be used in motivational messages				

To assess the effectiveness of this intervention, she compared retention rates in the experimental section of the course to three other sections that did not receive motivational messages and she did a qualitative review of student responses to various course evaluation and feedback instruments. She did not ask them directly about the effects of the motivational messages to avoid stimulating attitudes that may not have been present spontaneously in the students' minds. Improved retention rates of 70-80%, which are similar to conventional education, and student comments both offered clear support for the motivational messages.

## ***Motivational Idea Worksheet***

### **Introduction**

The *Motivational Idea Worksheet* (Table 11.3) is even more simplified than the simplified design matrix. This worksheet can be quite helpful in generating an idea for a single motivational tactic to use in a specific place in a lesson, or simply recording an idea for a motivational tactic that has popped into your mind even if you don't yet know when or where you will use it. Have you ever been listening to a presentation at a conference, observed a colleague using a tactic that you thought was interesting, or read something that gave you an idea? If so, this one-page worksheet is useful for documenting your idea and cataloging it according to its motivational



Table 11.3. Motivational Idea Worksheet.

<b>Motivational Idea</b>	
Author _____	Date _____
<p><b><i>This is the Setting</i></b>                      Class/Topic:                      Audience:  <b>Other Helpful Information</b>                      (For example, experience, attitude, gender, etc.):</p>	<p><b><i>This is the Situation (Problem)</i></b></p>
<p><b><i>Here is the Idea!</i></b>                      Relevance</p>	<p><b><u>Tactic Description</u></b></p>
<p>___ R.1. Relate to Goals: How can I best meet my learner’s goals? Do I know their goals?                      ___ R.2. Match Interests: How and when can I link my instruction to the learning styles and personal interests of the learners?                      ___ R.3. Tie to Experiences: How can I tie the instruction to the learner’s experiences?  <b>Confidence</b>                      ___ C.1. Success Expectations: How can I assist in building a positive expectation for success?                      ___ C.2. Success Opportunities: How will the learning experience support or enhance the students’ beliefs in their competence?                      ___ C.3. Personal Responsibility: How will the learners clearly know their success is based on their efforts and abilities instead of luck or instructor bias?  <b>Satisfaction</b>                      ___ S.1. Intrinsic Satisfaction: How can I encourage and support their intrinsic enjoyment of the learning experience?                      ___ S.2. Rewarding Outcomes: What will provide rewarding consequences to the learner’s successes?                      ___ S.3. Fair Treatment: How can I build learner perceptions of fair treatment?</p>	<p>(continue on other side)</p> <p><b>Result:</b> (How well did this idea work? Are there any special things to do or watch out for?)</p>

characteristics. I have students in my motivational classes and workshops fill these out as we go through the psychological foundations part of the program. Then, when we get to the design process they already have several ideas to incorporate.

## Instructions

In the Setting block (Table 11.3) you can include information about the learning topic or class that this idea applies to. The motivational idea that you are recording or trying to create could apply to a foreign language vocabulary lesson, a Civil War history lesson, a math lesson on triangles, an instructional systems lesson on system theory and cybernetics, or anything else. Also in this block, you can make comments about the intended audience and other pertinent information such as whether your idea is for middle school children with math anxiety, the accelerated learners in your 3rd period German language class, or masters' students in instructional systems who have no background in training design or delivery.

In the Situation, or Problem, block you can briefly describe the situation in which the motivational problem is occurring or will be expected to occur. It could be such things as the introductory part of a lesson on the Pythagorean Theorem in your middle school math class, the orientation lecture when inexperienced masters students are in the same classroom with students who have had work experience related to the topic, creating interest among advanced German language students who will be bored with the standard lesson, or creating a positive learning climate with employees assigned to mandatory training.

The third step is to check the motivational goals that you are hoping to achieve. For example, the primary goals with the German language students might be A.2 (Stimulate an attitude of inquiry) and R.3 (Tie to experiences). Identifying your specific motivational goals helps keep you focused on the purpose of the motivational idea as you compose it. This step constitutes your motivational analysis of the audience and helps you focus your idea for a motivational tactic.

The largest block on the page is where you compose your motivational idea. You can describe it in any way you wish, but you might want to have one or two sentences that give an overview of what it is and then elaborate on it. Also, it is a good idea to record your thoughts about how you will implement it. Will you divide the class into groups? How many? Do you have a YouTube video that you will include? What is the URL? (Keep in mind that YouTube is not totally stable; sometimes a favorite video disappears.)

Finally, if you implement your strategy, you can record the results. New ideas are sometimes totally successful on the first try, but often they aren't, at least not in the way you intended! Your best strategies will probably result from modifications and fine-tuning of your original idea.

## ***ARCS-Based Measures of Motivation***

### **Introduction**

There are two measurement tools that can be used in conjunction with the ARCS model. The first, called the *Course Interest Survey* (CIS), was designed to measure students' reactions to instructor-led instruction. The second, called the *Instructional Materials Motivation Survey* (IMMS), was designed to measure reactions to self-directed instructional materials. These are situation-specific self-report measures that can be used to estimate learners' motivational attitudes in the context of virtually any delivery system. The CIS can be used in face-to-face classroom instruction and in both synchronous and asynchronous online courses that are instructor facilitated. The IMMS can be used with print-based self-directed learning, computer-based instruction, or online courses that are primarily self-directed.

Furthermore, they were designed to be in correspondence with the theoretical foundation represented by the motivational concepts and theories comprising the ARCS Model (Keller, 1987a, 1987b). Because this theory incorporates psychological constructs from the empirical literature on human motivation (Keller, 1979, 1983, 1999), many of the items in the CIS and IMMS are similar in intent, but not in wording, to items in established measures of constructs such as need for achievement, locus of control, and self-efficacy, to mention three examples.

As situational instruments, the CIS and IMMS are not intended to measure students' generalized levels of motivation toward school learning; that is, they are not trait- or construct-type measures. The goal with these instruments was to be able to measure how motivated students are with respect to a particular course. The expectation is that these surveys can be used with undergraduate and graduate students, adults in non-collegiate settings, and with secondary students. They can also be used with younger students who have appropriate reading levels. With younger students or ones who are not sufficiently literate in English, some of the items may have to be read aloud and paraphrased to relate them to the classroom experiences of the audience.

Furthermore, both instruments can be adapted to fit specific situations. That is, the "default" wording of items contains phrases such as "this course," or "this lesson." These can be changed to fit the specific situation that is being assessed, such as "this lecture," "this computer-based instruction," or "this workshop." Also, it is possible to change the tense of the items to use them as a pretest. However, the substance of the items cannot be changed because they are based on specific attributes of motivation.

## Development Process

A pool of potential items was developed for each instrument by reviewing motivational concepts, strategies, and measurement instruments. These items were reviewed by 10 graduate students who were well versed in the motivational literature. They responded to each item then discussed the items which seemed ambiguous, unrelated to the appropriate higher-order concept (i.e., attention, relevance, confidence, or satisfaction), or otherwise difficult to respond to.

The original item pool was reduced and revised with respect to obvious things that could be done to remove ambiguity, sharpen the key concept in each item, and eliminate “double barreled items by dividing them into two items or improving their focus.” Then, the items were subjected to a further ambiguity check by responding in a contrived manner called “faking it.” A different group of ten adults who were mostly graduate students but not experts in the area of motivational knowledge were told to respond twice to the instrument they received. The first time they were to “fake good,” and the second time to “fake bad.” That is, they were to assume they were taking a course which was highly motivating and to answer each item in a way that would indicate their highly positive motivation. Second, they were to assume that the course was totally unmotivating and to answer accordingly. This test revealed a few items that could “go either way,” which meant they were poor discriminators. For example, both motivated and unmotivated students could agree with an item such as, “the instructor is very likeable.” These items were then revised and retested or deleted.

## Course Interest Survey

The CIS has 34 items with approximately equal numbers in each of the four ARCS categories. The items are listed (Table 11.4) in the order that they are normally administered. However, each of the four subscales can be used and scored independently. Also, the format of the survey can be modified to use Likert-type scales and electronic scoring methods. In this section, descriptions of the scoring procedure, reliability estimation, and original validity test are presented.

### Scoring

The CIS can be scored for each of the four subscales or the total scale score (Table 11.5). The response scale ranges from 1 to 5 (see Table 11.4). This means that the minimum score on the 34 item survey is 34, and the maximum is 170 with a midpoint of 102. The minimums, maximums, and midpoints for each subscale vary because they do not all have the same number of items.

Table 11.4 The Course Interest Survey Instrument.

<p>Instructions</p> <p><i>Course Interest Survey</i></p> <p>There are 34 statements in this questionnaire. Please think about each statement in relation to the class you have just taken and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.</p> <p>Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.</p> <p>Record your responses on the answer sheet that is provided and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey.</p> <p>Use the following values to indicate your response to each item.</p> <p>1 (or A) = Not true  2 (or B) = Slightly true  3 (or C) = Moderately true  4 (or D) = Mostly true  5 (or E) = Very true</p> <ol style="list-style-type: none"> <li>1. The instructor knows how to make us feel enthusiastic about the subject matter of this course.</li> <li>2. The things I am learning in this course will be useful to me.</li> <li>3. I feel confident that I will do well in this course.</li> <li>4. This class has very little in it that captures my attention.</li> <li>5. The instructor makes the subject matter of this course seem important.</li> <li>6. You have to be lucky to get good grades in this course.</li> <li>7. I have to work too hard to succeed in this course.</li> <li>8. I do NOT see how the content of this course relates to anything I already know.</li> <li>9. Whether or not I succeed in this course is up to me.</li> <li>10. The instructor creates suspense when building up to a point.</li> <li>11. The subject matter of this course is just too difficult for me.</li> <li>12. I feel that this course gives me a lot of satisfaction.</li> <li>13. In this class, I try to set and achieve high standards of excellence.</li> <li>14. I feel that the grades or other recognition I receive are fair compared to other students.</li> <li>15. The students in this class seem curious about the subject matter.</li> <li>16. I enjoy working for this course.</li> <li>17. It is difficult to predict what grade the instructor will give my assignments.</li> <li>18. I am pleased with the instructor's evaluations of my work compared to how well I think I have done.</li> <li>19. I feel satisfied with what I am getting from this course.</li> </ol>
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Table 11.4 (continued)

- 20. The content of this course relates to my expectations and goals.
- 21. The instructor does unusual or surprising things that are interesting.
- 22. The students actively participate in this class.
- 23. To accomplish my goals, it is important that I do well in this course.
- 24. The instructor uses an interesting variety of teaching techniques.
- 25. I do NOT think I will benefit much from this course.
- 26. I often daydream while in this class.
- 27. As I am taking this class, I believe that I can succeed if I try hard enough.
- 28. The personal benefits of this course are clear to me.
- 29. My curiosity is often stimulated by the questions asked or the problems given on the subject matter in this class.
- 30. I find the challenge level in this course to be about right: neither too easy not too hard.
- 31. I feel rather disappointed with this course.
- 32. I feel that I get enough recognition of my work in this course by means of grades, comments, or other feedback.
- 33. The amount of work I have to do is appropriate for this type of course.
- 34. I get enough feedback to know how well I am doing.

Table 11.5. Scoring Guide for the Course Interest Survey (CIS).

Attention	Relevance	Confidence	Satisfaction
1	2	3	7 (reverse)
4 (reverse)	5	6 (reverse)	12
10	8 (reverse)	9	14
15	13	11 (reverse)	16
21	20	17 (reverse)	18
24	22	27	19
26 (reverse)	23	30	31 (reverse)
29	25 (reverse)	34	32
	28		33

An alternate scoring method is to find the average score for each subscale and the total scale instead of using sums. For each respondent, divide the total score on a given scale by the number of items in that scale. This converts the totals into a score ranging from 1 to 5 and makes it easier to compare performance on each of the subscales.

There are no norms for the survey. As it is a situation-specific measure there is no expectation of a normal distribution of responses.

Scores are determined by summing the responses for each subscale and the total scale. Please note that the items marked reverse (Table 11.5) are stated in a negative manner. The responses have to be reversed before they can be added into the response total. That is, for the reversed items, 5 = 1, 4 = 2, 3 = 3, 2 = 4, and 1 = 5.

### ***CIS Internal Consistency (Reliability) Estimation***

The survey was first administered to a class of 45 university undergraduates, and the internal consistency estimates were satisfactorily high. A pretest version was prepared by rewriting items in the future tense and was administered to an undergraduate class of 65 students. The internal consistency estimates were high, but further revisions were made to improve the instrument. The standard version of the survey was then administered to 200 undergraduates and graduate students in the School of Education at a university in the Southeast. Information was also obtained about the students' course grades and grade point averages. The internal consistency estimates, based on Cronbach's alpha, were satisfactory (Table 11.6).

Table 11.6. CIS Internal Consistency Estimates.

Scale	Reliability Estimate (Cronbach's $\alpha$ )
Attention	0.84
Relevance	0.84
Confidence	0.81
Satisfaction	0.88
Total scale	0.95

### ***CIS Situational Validity***

CIS scores from the 200 university undergraduates and graduates used for internal consistency estimation were correlated with their course grades and grade point averages (Table 11.7). All of the correlations with course grade are significant at or beyond the 0.05 level, and none of the correlations with grade point average are significant at the 0.05 level. This supports the validity of the CIS as a situation-specific measure of motivation, and not as a generalized motivation measure, or "construct" measure, for school learning.

Table 11.7. CIS Correlations with Course Grade and GPA.

<b>ARCS Categories</b>	<b>Course Grade</b>	<b>GPA</b>
Attention	0.19	0.01
Relevance	0.43	0.08
Confidence	0.51	0.01
Satisfaction	0.49	0.03
Total Scale	0.47	0.04

## **Instructional Materials Motivation Scale**

The IMMS has 36 items. The Relevance and Confidence subscales both have 9 items, the Satisfaction subscale has 6, and the Attention subscale has 12. The primary reasons for the disproportionate numbers of items in the Attention and Satisfaction subscales are that boredom and lack of stimulation are such ubiquitous characteristics in instructional writing and the satisfaction category does not have as many points of connection to printed material as the others. As with the CIS, the IMMS items are listed (Table 11.8) in the order that they are normally administered, but each of the four subscales can be used and scored independently. Also, the format of the survey can be modified to use Likert-type scales and electronic scoring methods. In the remainder of this section as in the previous one, descriptions of the scoring procedure, reliability estimation, and original validity test are presented.

### **Scoring**

As with the CIS, the IMMS survey can be scored for each of the four subscales or the total scale score (Table 11.9). The response scale ranges from 1 to 5 (see Table 11.8). This means that the minimum score on the 36 item survey is 36, and the maximum is 180 with a midpoint of 108. The minimums, maximums, and midpoints for each subscale vary because they do not all have the same number of items.

An alternate and preferable scoring method is to find the average score for each subscale and the total scale instead of using sums, especially with the unequal sizes of the subscales. For each respondent, divide the total score on a given scale by the number of items in that scale. This converts the totals into a score ranging from 1 to 5 and makes it easier to compare performance on each of the subscales.

One cannot designate a given score as high or low because there are no norms for the survey. Scores obtained at one point in time, as in a



Table 11.8. The Instructional Materials Motivation Survey Instrument.

Instructions <i>Instructional Materials Motivation Survey</i>
<p>There are 36 statements in this questionnaire. Please think about each statement in relation to the instructional materials you have just studied and indicate how true it is. Give the answer that truly applies to you, and not what you would like to be true, or what you think others want to hear.</p> <p>Think about each statement by itself and indicate how true it is. Do not be influenced by your answers to other statements.</p> <p>Record your responses on the answer sheet that is provided and follow any additional instructions that may be provided in regard to the answer sheet that is being used with this survey. Thank you.</p> <p>Use the following values to indicate your response to each item.</p> <p>1 (or A) = Not true            2 (or B) = Slightly true            3 (or C) = Moderately true            4 (or D) = Mostly true            5 (or E) = Very true</p> <ol style="list-style-type: none"> <li>1. When I first looked at this lesson, I had the impression that it would be easy for me.</li> <li>2. There was something interesting at the beginning of this lesson that got my attention.</li> <li>3. This material was more difficult to understand than I would like for it to be.</li> <li>4. After reading the introductory information, I felt confident that I knew what I was supposed to learn from this lesson.</li> <li>5. Completing the exercises in this lesson gave me a satisfying feeling of accomplishment.</li> <li>6. It is clear to me how the content of this material is related to things I already know.</li> <li>7. Many of the pages had so much information that it was hard to pick out and remember the important points.</li> <li>8. These materials are eye-catching.</li> <li>9. There were stories, pictures, or examples that showed me how this material could be important to some people.</li> <li>10. Completing this lesson successfully was important to me.</li> <li>11. The quality of the writing helped to hold my attention.</li> <li>12. This lesson is so abstract that it was hard to keep my attention on it.</li> <li>13. As I worked on this lesson, I was confident that I could learn the content.</li> </ol>

Table 11.8 (continued)

- |  |
|--|
| <p>14. I enjoyed this lesson so much that I would like to know more about this topic.</p> <p>15. The pages of this lesson look dry and unappealing.</p> <p>16. The content of this material is relevant to my interests.</p> <p>17. The way the information is arranged on the pages helped keep my attention.</p> <p>18. There are explanations or examples of how people use the knowledge in this lesson.</p> <p>19. The exercises in this lesson were too difficult.</p> <p>20. This lesson has things that stimulated my curiosity.</p> <p>21. I really enjoyed studying this lesson.</p> <p>22. The amount of repetition in this lesson caused me to get bored sometimes.</p> <p>23. The content and style of writing in this lesson convey the impression that its content is worth knowing.</p> <p>24. I learned some things that were surprising or unexpected.</p> <p>25. After working on this lesson for awhile, I was confident that I would be able to pass a test on it.</p> <p>26. This lesson was not relevant to my needs because I already knew most of it.</p> <p>27. The wording of feedback after the exercises, or of other comments in this lesson, helped me feel rewarded for my effort.</p> <p>28. The variety of reading passages, exercises, illustrations, etc., helped keep my attention on the lesson.</p> <p>29. The style of writing is boring.</p> <p>30. I could relate the content of this lesson to things I have seen, done, or thought about in my own life.</p> <p>31. There are so many words on each page that it is irritating.</p> <p>32. It felt good to successfully complete this lesson.</p> <p>33. The content of this lesson will be useful to me.</p> <p>34. I could not really understand quite a bit of the material in this lesson.</p> <p>35. The good organization of the content helped me be confident that I would learn this material.</p> <p>36. It was a pleasure to work on such a well-designed lesson.</p> |
|--|

pretest, can be compared with subsequent scores or with the scores obtained by people in a comparison group. Also, as it is a situation-specific measure, there is no expectation of a normal distribution of responses.

Scores are determined by summing the responses for each subscale and the total scale. Please note that the items marked reverse (Table 11.9) are stated in a negative manner. The responses have to be reversed before they can be added into the response total. That is, for these items, 5 = 1, 4 = 2, 3 = 3, 2 = 4, and 1 = 5.

Table 11.9. IMMS Scoring Guide.

Attention	Relevance	Confidence	Satisfaction
2	6	1	5
8	9	3 (reverse)	14
11	10	4	21
12 (reverse)	16	7 (reverse)	27
15 (reverse)	18	13	32
17	23	19 (reverse)	36
20	26 (reverse)	25	
22 (reverse)	30	34 (reverse)	
24	33	35	
28			
29 (reverse)			
31 (reverse)			

### ***IMMS Internal Consistency (Reliability) Estimation***

The survey was administered to a total of 90 undergraduate students in two undergraduate classes for preservice teachers at a large Southern university. The internal consistency estimates, based on Cronbach's alpha, were satisfactory (Table 11.10).

Table 11.10. IMMSS Reliability Estimates.

Scale	Reliability Estimate (Cronbach $\alpha$ )
Attention	.89
Relevance	.81
Confidence	.90
Satisfaction	.92
Total scale	.96

### ***IMMS Validity Test***

Validity was established by preparing two sets of instructional materials covering the concept of behavioral objectives. These materials were part of a unit of work on lesson planning and instructional design in an applied educational psychology course for undergraduate preservice teachers. Both lessons had the same objectives and technical content. The

lesson for the control group was prepared according to standard principles of instructional design, but was not enhanced in any way to make it interesting. The experimental lesson was enhanced with strategies to stimulate curiosity, illustrate the practical relevance of the content, build confidence, and provide satisfying outcomes. Students were randomly assigned to the two lessons which they completed during one class period, including testing. Scores on the experimental lesson were significantly higher than for the control lesson.

## **Status of the CIS and IMMS**

The four subscales of these instruments can have high intercorrelations which makes it difficult to apply traditional factor analysis to the instrument and obtain this factor structure (Huang, Huang, Diefes-Dux, & Imbrie, 2005). This is in part because these instruments are designed to measure situation-specific attitudes and not psychological constructs. Situational measure can vary tremendously, especially when respondents have a largely positive attitude toward the given situation. Thus, we used other methods to support the conceptual structure of the ARCS model and the associated measurement instruments. Naime-Diffenbach (1991) manipulated the motivational properties of a set of instructional materials by enhancing their attention and confidence characteristics and stripping all possible motivational aspects of their relevance and satisfaction characteristics. Her study confirmed that when there is actual variation in materials in accordance with these motivational dimensions the differences will be reflected in scores on the measurement instrument.

Small and Gluck (1994) used a magnitude scaling approach to estimate the perceived closeness or distance between different aspects of motivational attributes and their study confirmed the four component taxonomy of the ARCS theory. Recent studies such as Yu's (2008) study of motivation and usability in a self-paced online learning environment provide additional confirmation of the internal consistency and empirical validity of the IMMS.

Both of these instruments have been used in many studies and have even been translated into several other languages. It is beyond the scope of this book to include a summary of this literature, but its existence helps confirm the utility and validity of these instruments.

## ***Motivational Tactics Checklist***

### **Introduction**

The *Motivational Tactics Checklist* (Table 11.11) was developed and revised over a period of several years. It focuses primarily but not exclusively on "print" types of material, whether on paper or on computer

Table 11.11. The Motivational Tactics Checklist.

<b>ATTENTION</b>
<p><b>A1. PERCEPTUAL AROUSAL (CONCRETENESS).</b>  <i>What can I do to capture their interest?</i></p>
<ol style="list-style-type: none"> <li>1. Are there references to specific people rather than “mankind,” “people,” or other such abstractions?</li> <li>2. Are general principles, ideas, or other abstractions illustrated with concrete examples or visualizations?</li> <li>3. Are complex concepts or relationships among concepts made more concrete by use of metaphors or analogies?</li> <li>4. Are items in a series presented in a list format rather than paragraph format?</li> <li>5. Are step-by-step procedures or relationships among concepts made more concrete by use of flow charts, diagrams, cartoons, or other visual aids?</li> </ol>
<p><b>A2. INQUIRY AROUSAL (CURIOSITY AROUSAL)</b>  <i>How can I stimulate an attitude of inquiry?</i></p>
<ol style="list-style-type: none"> <li>1. Are topics introduced or developed problematically (i.e., is a sense of inquiry stimulated by presenting a problem which the new knowledge or skill will help solve)?</li> <li>2. Is curiosity stimulated by provoking mental conflict (e.g., facts that contradict past experience; paradoxical examples; conflicting principles or facts; unexpected opinions)?</li> <li>3. Is a sense of mystery evoked by describing unresolved problems which may or may not have a solution?</li> <li>4. Are visuals used to stimulate curiosity or create mystery?</li> </ol>
<p><b>A3. VARIABILITY</b>  <i>How can I maintain their attention?</i></p>
<p>Variation in Format</p> <ol style="list-style-type: none"> <li>1. Is white space used to separate blocks of information (text and/or illustrations)?</li> <li>2. Are a variety of typefaces used to highlight titles, quotes, rules, key words, etc.?</li> <li>3. Are there variations in layout (e.g., variation in spatial location of blocks of information)?</li> <li>4. Are there variations in types of material (e.g., alternations between blocks of text, figures, tables, pictures)?</li> </ol>

Table 11.11 (continued)

<p>Variation in Style and Sequence</p> <ol style="list-style-type: none"> <li>5. Is there variation in writing function (e.g., exposition, description, narration, persuasion)?</li> <li>6. Is there variation in tone (e.g., serious, humorous, exhortation)?</li> <li>7. Is there variation in the sequence of the elements of the instruction (e.g., is a sequence such as “introduction”, “presentation”, “example”, “exercise” varied by changing the order, adding an extra exercise)?</li> <li>8. Is there variation between content presentations and active response events (e.g., questions, problems, exercises, puzzles)?</li> </ol>
<p><b>RELEVANCE</b></p>
<p>R1. GOAL ORIENTATION</p> <p>How can I relate the instruction to the learners’ goals?</p>
<p>Present Worth</p> <ol style="list-style-type: none"> <li>1. Is the immediate benefit of the instruction either stated or self-evident?</li> <li>2. Are comments, anecdotes, or examples included that stress the intrinsic satisfactions of the subject of instruction?</li> <li>3. Future Value</li> <li>4. Are there statements describing what the learner will be able to do after finishing these instructional materials?</li> <li>5. Are some of the examples and exercises clearly related to the knowledge and skills that the students will need in the future?</li> <li>6. Is the student told how the successful accomplishment of this instruction is related to future goal accomplishment (e.g., is success in this instructional situation important for admission to subsequent courses, selection of a major area of study, or admission to advanced levels of study, salary increase, job retention, or promotion)?</li> <li>7. Is the learner told how this instruction will improve his or her general life coping skills?</li> <li>8. Is the learner encouraged to think of this instruction as contributing to the development of an intrinsically interesting area of study and development?</li> </ol>
<p>R2. MOTIVE MATCHING</p> <p>How and when can I link my instruction to the learning styles and personal interests of the learners?</p>
<p>Basic Motive Stimulation</p> <ol style="list-style-type: none"> <li>1. Is personal language used to make the learner feel that he or she is being talked to as a person?</li> <li>2. Are examples (anecdotes, statistics, etc.) provided that illustrate achievement striving and accomplishment?</li> </ol>

Table 11.11 (continued)

<ol style="list-style-type: none"> <li>3. Are statements or examples included that illustrate the feelings associated with achievement?</li> <li>4. Is the learner encouraged to visualize the process of achieving and succeeding, and the feelings associated with it?</li> <li>5. Are exercises included that allow for personal goal setting, record keeping, and feedback?</li> <li>6. Are exercises included that require cooperative work groups?</li> <li>7. Are puzzles, games, or simulations included that stimulate problem solving, achievement-striving behavior?</li> <li>8. In the exercises (including puzzles, games, and simulations), are the learners encouraged to compete against each other, themselves (i.e., trying to beat their own record), or against a standard?</li> </ol> <p>Role Models</p> <ol style="list-style-type: none"> <li>9. Are there anecdotes about noteworthy people in the area of study, the obstacles they faced, their accomplishments, and the consequences?</li> <li>10. Are there examples, testimonials, etc., from persons who attained further goals after successfully completing the course of instruction.</li> <li>11. Are there references to, or quotations from, people who can convincingly describe the benefits of the particular skill/knowledge area?</li> </ol>
<p><b>R3. FAMILIARITY</b></p> <p>How can I tie the instruction to the learner's experiences?</p>
<p>Connection to Previous Experience</p> <ol style="list-style-type: none"> <li>1. Are there explicit statements about how the instruction builds on the learner's existing skills or knowledge?</li> <li>2. Are analogies or metaphors used to connect the present material to processes, concepts, skills, or concepts already familiar to the learner?</li> </ol> <p>Options for Individualization</p> <ol style="list-style-type: none"> <li>3. Is the learner given choices in the content of assignments (e.g., is the learner allowed to choose examples and topics of personal interest for at least some of the assignments)?</li> <li>4. Is the learner given choices in the type of assignment (e.g., is the learner allowed to select from a variety of means to accomplish a given end)?</li> </ol>
<p><b>CONFIDENCE</b></p>
<p><b>C1. LEARNING REQUIREMENTS</b></p> <p>How can I assist in building a positive expectation for success?</p>

Table 11.11 (continued)

<ol style="list-style-type: none"> <li>1. Are there clear statements, in terms of observable behaviors, of what is expected of the learners as evidence of successful learning?</li> <li>2. Is there a means for learners to write their own learning goals or objectives?</li> </ol>
<p><b>C2. POSITIVE CONSEQUENCES</b></p> <p>How will the learning experience support or enhance the students' beliefs in their competence?</p>
<p>Challenge Level</p> <ol style="list-style-type: none"> <li>1. Is the content organized in a clear, easy to follow, sequence?</li> <li>2. Are the tasks sequenced from simple to difficult within each segment of the materials?</li> <li>3. Is the overall challenge level (reading level, examples, exercises) appropriate for this audience?</li> </ol> <p>Anxiety Reduction</p> <ol style="list-style-type: none"> <li>4. Are the materials free of "trick" or excessively difficult questions or exercises?</li> <li>5. Are the exercises consistent with the objectives, content, and examples?</li> <li>6. Are methods for self-evaluation, such as answers to exercises, provided?</li> <li>7. Is confirmational feedback provided for acceptable responses, and corrective feedback provided for responses that do not meet criteria?</li> </ol>
<p><b>C3. PERSONAL RESPONSIBILITY</b></p> <p>How will the learners clearly know their success is based on their efforts and abilities?</p>
<ol style="list-style-type: none"> <li>1. Are learners given choices in sequencing; i.e., how they can sequence their study of different parts of the material?</li> <li>2. Are learners allowed to go at their own pace?</li> <li>3. Are learners given choices among ways of demonstrating their competency (i.e., alternative methods of exercising and testing)?</li> <li>4. Are learners given opportunities to create their own exercises or methods of demonstrating competency?</li> <li>5. Are learners given choices over work environment; i.e., working in a room with other people, or away from other people?</li> <li>6. Are learners given opportunities to record comments on how the materials could be improved or made more interesting?</li> </ol>
<p><b>SATISFACTION</b></p>
<p><b>S1. INTRINSIC REINFORCEMENT</b></p> <p>How can I encourage and support their intrinsic enjoyment of the learning experience?</p>



Table 11.11 (continued)

<p>Positive Recognition</p> <ol style="list-style-type: none"> <li>1. Is the student given opportunities to use a newly acquired skill in a realistic setting as soon as possible?</li> <li>2. Is there verbal reinforcement of the learner's intrinsic pride in accomplishing a difficult task?</li> <li>3. Do the materials include positive, enthusiastic comments which reflect positive feelings about goal accomplishment?</li> <li>4. Are there opportunities for learners who have mastered a task to help others who have not yet done so?</li> <li>5. Are there acknowledgements of any actions or characteristics that were necessary for success?</li> <li>6. Are there acknowledgements of any risks or challenges that were met?</li> </ol> <p>Continuing Motivation</p> <ol style="list-style-type: none"> <li>7. Is information provided about areas of related interest?</li> <li>8. Are learners asked, or informed, about how they might continue pursue to their interest in the topic?</li> <li>9. Are the learners informed about new areas of application?</li> </ol>
<p><b>S2. EXTRINSIC REWARDS</b></p> <p>What will provide rewarding consequences to the learner's successes?</p> <ol style="list-style-type: none"> <li>1. Are games with scoring systems included to provide an extrinsic reward system for routine, boring tasks such as drill and practice?</li> <li>2. Are extrinsic rewards used to reinforce intrinsically interesting tasks in an unexpected, non-controlling, manner?</li> <li>3. Are public congratulations given for good performance?</li> <li>4. Are students given personal attention while working to accomplish the task, or after successful task accomplishment?</li> <li>5. Are reinforcements used frequently when learners are trying to master a new skill?</li> <li>6. Are reinforcements used more intermittently as learners become more competent at a task?</li> <li>7. Are threats and surveillance avoided as means of obtaining task performance?</li> <li>8. Are certificates or "symbolic" rewards used to reward success in individual or intergroup competitions, or at the end of a course?</li> </ol>
<p><b>S3. EQUITY</b></p> <p>How can I build learner perceptions of fair treatment?</p> <ol style="list-style-type: none"> <li>1. Are the content and types of problems in the final exercises and posttests consistent with the knowledge, skills, and practice exercises in the materials?</li> <li>2. Is the level of difficulty on final exercises and posttests consistent with preceding exercises?</li> </ol>

displays. It can be used to guide critiques of existing materials or for ideas when creating new materials. However, this is a catalog of ideas and characteristics, not a set of recommendations for every instructional product. As with all other aspects of motivational design, this list should be used in conjunction with the results of an audience motivational analysis. The instructions provide some guidance about how this is done.

## Instructions

When using this checklist in support of the design and development of new materials, it can be reviewed for ideas and display features that are appropriate based on the characteristics of your audience. In this case, you can develop an adaptation of this list to include only those items which you will use to guide design and as an evaluative checklist during developmental tryouts and pilot tests.

When you use this checklist for guidance when reviewing existing products, there are several decisions to be made. As you examine the materials and consider the tactics, you can decide whether the materials are satisfactory, have a deficiency, or have an excess of tactics.

*Satisfactory:* This means that the given tactic is contained in the materials and it is an appropriate tactic to use with your audience.

*Deficiency:* A deficiency is when you identify motivational tactics to add to the materials given the characteristics of your audience.

*Excess:* An excess occurs when the materials contain motivational tactics that are not appropriate for your audience. An example of excess would be the inclusion of a set of cartoons that are considered to be “babyish” for the intended audience or to detract from the seriousness of the content.

As before, you can develop a custom version of this checklist by deleting all the items that do not apply, adding supplemental tactic descriptions, and then using it as a design and evaluation aid.

## ***Motivational Delivery Checklist***

### Introduction

The *Motivational Delivery Checklist* (Table 11.12) was developed by Bonnie H. Armstrong and me and is included here with the permission of both of us. This checklist is used to assess the motivational characteristics of instructor-led classes. It incorporates features that pertain to presentation style, learner focus, and other elements of good motivational and instructional design. In some cases, a less than satisfactory performance by the instructor could be the result of deficiencies in the material provided to the

Table 11.12. List of Items in the Motivational Delivery Checklist.

Motivational Delivery Checklist
<p><b>DURING INTRODUCTORY SECTION:</b></p> <p><b>Attention:</b></p> <ol style="list-style-type: none"><li>1. Uses a “hook”, e.g., poses a problem or paradox of interest to learners.</li><li>2. Relates instruction to element of basic appeal to learners.</li></ol> <p><b>Relevance:</b></p> <ol style="list-style-type: none"><li>3. If no previous learner analysis is available, uses an icebreaker to find out learner experiences, interests, and goals.</li><li>4. Explains how the objectives relate to learners’ jobs and professional roles.</li><li>5. Explains how the objectives related to learners’ personal interests, experiences, and goals.</li></ol> <p><b>Confidence</b></p> <ol style="list-style-type: none"><li>6. Uses an icebreaker when learners don’t know each other or come from diverse groups.</li><li>7. If learners are likely to be nervous or uncomfortable, uses small group instead of individual responses in icebreaker or other warm-up activities.</li><li>8. Uses “roadmaps” to help learners see what will occur during the class and what they will be doing.</li><li>9. Explains class rules.</li></ol> <p><b>THROUGHOUT CLASS:</b></p> <p><b>Attention</b></p> <ol style="list-style-type: none"><li>10. Uses vigorous and energetic movements.</li><li>11. Uses language and facial expresses which convey enthusiasm.</li><li>12. Maintains equal eye contact among learners.</li><li>13. Varies tone of voice for inflection and to emphasize main points.</li><li>14. Maintains volume of voice loud enough for all to hear and varied enough to create interest.</li><li>15. Varies pace of speech.</li><li>16. Uses correct pronunciation and enunciates clearly.</li></ol> <p><b>Relevance</b></p> <ol style="list-style-type: none"><li>17. Allows time for learner comments and questions, either throughout the class or at specified periods.</li><li>18. Uses examples related to current or future jobs.</li><li>19. Uses language and terminology appropriate to learners and their context.</li></ol> <p><b>Confidence</b></p> <ol style="list-style-type: none"><li>20. Uses learners’ names.</li><li>21. Uses active listening to respond to learner comments and questions.</li><li>22. Uses positive body language by looking friendly and using open gestures and postures.</li><li>23. Uses friendly facial expression to confirm or modify a learner’s response, even if wrong.</li></ol>

Table 11.12 (continued)

24. After asking a question, pauses long enough to allow learners to respond.
  25. Maintains eye contact with learner making a comment or asking a question.
  26. Makes eye contact with every learner regularly.
  27. Emphasizes any correct components of a learner's response or comment.
  28. Uses neutral, task-oriented words to correct a learner.
  29. Allows the learner who receives correction to ask questions for clarity and responds appropriately to such questions.
  30. Provides feedback on performance promptly.
- Satisfaction
31. Makes statements giving recognition and credit to learners as appropriate.
  32. Makes statements attributing learner success to learner effort.
  33. Provides tangible rewards at the end of boring, repetitive, lengthy, or complex sections, e.g., a refreshment break at the end of a lecture.
  34. Makes comments, when deserved, acknowledging the effort and achievement of the class.

**OCCASIONALLY:**

## Attention

35. Uses questions to pose problems or paradoxes.
36. Uses questions to elicit learner perspectives or feelings.
37. Incorporates learner experiences, interests, or goals into examples, stories, problems.
38. Uses audiovisual aids when appropriate.

## Relevance

39. Incorporates specific learner experiences, interests, or goals into examples.

## Confidence

40. Requests feedback and receives it with friendly facial expression and neutral appreciative words.
41. Asks for specifics and clarification if learners appear confused, angry, distressed, or uninterested.
42. Manages feedback by stopping it when necessary.
43. Accepts feedback without explaining or rationalizing.
44. Makes statements showing learners that he/she believes they can succeed and that he/she is there to help them.
45. Makes statements attributing learner success to learner effort.

**AT THE END OF INSTRUCTION:**

## Satisfaction

46. Gives recognition of accomplishment at the end of instruction, e.g., verbal acknowledgement or a certificate of achievement.
47. Expresses appreciation, when earned, of learner effort and accomplishment.

instructor. The investigation into the cause of the problem would occur after the problem was noted on this worksheet. The instructor can also use this checklist in advance of instruction to assess the completeness of the instructional materials, and as an aid to rehearsal.

## Instructions

You may use the checklist in any manner that serves your requirements. One approach is to check each item using the following notation:

**E** = Excellent

**S** = Satisfactory

**I** = Needs Improvement

**O** = Omitted (But should be included)

**NA** = Not Applicable

## Summary

This chapter described several design aids, measurement instruments, and checklists that can assist you in motivational design and research activities. All of these items have been created in the context of application and proven to be useful, but they are only a small sampling of tools that people have developed, many of which I have been told about but have not seen. If you begin to implement the systematic process of motivational design, it is highly likely that you will create tools that benefit you as you do this work.

To me, the most important point to take from this chapter is that it underscores the fact that motivational design can be a systematic process. You can follow the process described in this book and use various tools and methods of documentation to constantly improve your skills with practice!